

Claims

What is claimed is:

1. A microarray comprising at least 10,000 different features on a substrate, wherein each feature comprises:

5 a nanotube connecting two electrodes; and

an oligonucleotide immobilized on the nanotube, wherein each of the features has a different oligonucleotide.

2. The microarray of Claim 1 wherein the substrate comprises a microelectronic circuit for detecting at least one electrical characteristic of the nanotubes connecting electrodes.

3. The microarray of Claim 2 wherein there are at least 1,000,000 features on a substrate.

4. The microarray of Claim 3 wherein the at least one electrical characteristic comprises conductance.

5. A method for manufacturing a microarray comprising:
fabricating a substrate comprising electrodes and microelectronic circuits;
growing nanotubes connecting electrodes; and
immobilizing oligonucleotides on the nanotubes.

6. The method of Claim 5 wherein the immobilizing comprises synthesizing oligonucleotides on the nanotubes.

5 7. The method of Claim 6 wherein the synthesizing comprises photodirected synthesis.

8. The method of Claim 5 wherein the immobilizing comprises spotting oligonucleotides on the nanotubes.

10

9. The method of Claim 8 wherein the spotting comprises delivering oligonucleotide onto nanotubes using an ink-jet printer.